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JUN 18 1919
BUREAU OF PLANT INDUSTRY

# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR WEEK ENDING JUNE 7, 1919.
(Except where otherwise indicated).

Amarillo:

We have been having some peculiar weather the past week; May 31 was very warm with a maximum of 85, and for the next four days we had a north wind and a maximum temperature of 62 degrees and a minimum of 32 degrees on two of those days. The wind then swung around from the north and by the 6th we had a temperature of 89 degrees.

The cool weather of the fore part of the week checked the growth of all the crops and very little growth has been shown until the past two days. The wheat is showing the need of some more moisture; soil samples taken on some of the wheat plats yesterday showed the soil to be very dry, except on the 5th and 6th foot in one corner of one plot

Cowpeas and beans were planted on the 6th. Some of the alleys between plats have been hoed. We have been so short of labor that the weeds are getting a good start.

Maximum temperature for the week, 89 on the 6th; minimum, 38 on the 2nd and 3rd; average hourly wind velocity, 6.2; evaporation, 4' tank, 1.973, 8' tank, 1.703; precipitation, .13 inch.

Ardmore:

The maximum temperature for the week was 79 degrees; the minimum was 33 degrees; and the precipitation amounted to .03 inch.

A light, but general, frost occurred on June 7 - the latest frost ever recorded at this station. Some damage was done to corn and gardens.

The week has been unusually cold for this season and crops have not made a good growth with the exception of winter wheat. Range conditions have improved materially since the heavy rain the latter part of May.

Winter rye was plowed under on the station for green manure on June 4. The crop averaged about 42 inches in height.

Prof. George M. Rommel, Chief, Animal Husbandry Division, visited the station one day during the week.

All station crops have been planted for about two weeks. Most of the corn and cane has been cultivated at least one time. Ten acres were planted to sunflowers for ensilage. The crop is up in good condition. About 500 acres are under cultivation on the station this season.

The beef cattle grazing experiment was started on May 22. Forty four head of three-year-old steers are being used in this experiment.

The Farm Boys Encampment will be held on the station grounds from July 14 to 18, inclusive. The Annual Farmer's Picnic will be July 18. It is expected that one hundred to one hundred and fifty boys will be in the encampment.

Bellefourche:

There has been only .30 of an inch of rain since May 10. During all this time the weather has been exceptionally warm. As a consequence dry-land crops are in very poor condition. Alfalfa and Brome grass are

Bellefourche, cont'd:

practically dead. They are almost complete failures. Winter wheat on continuously cropped land is injured beyond recovery. That on fallow land is still in good condition. Winter wheat and winter rye on corn ground have commenced to fire but are not yet severely injured.

Spring grains have not suffered severely as yet. Only continuously cropped land or on land where grain follows grain have they fired to any extent.

The corn on fall plowing has been thinned. That on spring plowing has not germinated.

The grass on the prairie is in very poor condition for this season of the year. As the range is heavily stocked, the supply of feed is likely to become exhausted before the summer is over unless rain comes very soon.

Maximum temperature was 84; minimum, 32; prec., .30 inch.

Big Spring:

Sunday afternoon, June 2nd, a hard north wind began blowing, which caused the temperature to drop rapidly. About 4 A.M. Monday morning we had a light shower of .20 inch. The wind remained in the north all day Monday and was quite cool for this time of the year, - the maximum temperature for the day being 68 degrees. On Tuesday morning we had a minimum temperature of 39, which is the lowest recorded in June since the station was established.

This low temperature has had a bad effect on cotton, while other crops seem to be growing well. The latter part of the week was much warmer and we look for more normal temperatures from now on. Plats D, E, F & G in the winter wheat c.c. series were harvested Thursday. The yield on these plats will probably run from 12 to 20 bushels per acre. Mr. B. E. Rothgeb arrived at the station for a visit Saturday morning.

Maximum temperature for the week was 99, the minimum 39; wind velocity was 5.6 miles; evaporation was 2.56"; precipitation amounted to .30 of an inch.

Dalhart:

We have had continued cold weather ever since about the 15th of May until the last two days. One night the thermometer got down to 36 in the instrument shelter but there was a light frost. No damage was done outside of nipping a few tender leaves on the most tender plants. The sorghums on the date work were not damaged. We have had hard winds continuously all week until Thursday when the wind went down and it has been quiet and hot since.

The cold weather that has prevailed for so long has caused the seed that has been planted to germinate poorly. All the farmers that have gone ahead with their planting during this cold spell have to replant. The plants that emerged have been on a standstill and are a sickly yellow. We are going to have to replant our corn. We have not made any plantings except the dates and corn. We have had three days warm weather "counting today", this week. If it does not storm or turn out cold again before

Dalhart, cont'd:

the first of the week we will begin our planting and finish during the week. We have been justified in not planting up to this date.

The field work during the week has consisted of plowing and harrowing. We have all our plowing done now except the A plats of the M. C. Series. When we commence our planting we will be able to go ahead with it without having to stop to prepare the seed bed. We have the weeds well under control and everything is in good shape for planting.

We are hauling sand and cement this week for the floor in the implement shed. We hope to get the floor in the shed this month.

From the present indications we will be able to harvest most of our rye by the latter part of next week.

Mr. E. F. Chilcott visited the station Monday evening of this week. He went from here to Tucumcari and returned to Dalhart Tuesday night and left for Woodward Wednesday noon. Mr. B. E. Rothgeb visited the station Wednesday of this week and had a short visit with Mr. E. F. Chilcott before he left. Mr. Rothgeb went from here to Tucumcari.

Maximum temperature for the week was 85, the minimum 36. Evaporation was 1.731 inches. The average hourly wind velocity was 9.1 miles.

Dickinson:

Weather conditions have not been favorable during the past week for the rapid growth of crops. The soil is getting dry and low temperatures have prevailed, with a minimum of 28 degrees on June 2. This frost damaged crops on the station only slightly, except in one narrow strip of low ground where corn and alfalfa were frozen.

All intertilled crops and the alleys and roadways have been cultivated during the week. The roadways of the rotations have all been plowed to destroy the brome sod which was extending into the plots. Six-foot soil samples were taken on all the continuously cropped plats.

Grasshoppers are doing an enormous amount of damage in this county, many farmers reporting entire fields of grain destroyed. An active and well organized campaign is being conducted by the farm bureau and much poisoning is being done. It was impossible to obtain materials in large enough amounts to cover the entire county at the most effective time. Poison is being supplied by the county and distributed through townships, where it is mixed at a central plant and issued to farmers who are required to spread it. To date over 480 tons of bran, 40,000 pounds of arsenic, with lemon, molasses and salt in proportion, have been distributed.

On the station poison was spread on the second day of the grasshopper's appearance, and practically every day since. The pest was well under control until the past few days when the insects have become large enough to travel quite rapidly, although they are not flying yet. Now they are coming in form neighboring fields and threaten to destroy some of the increase grain.

Besides grasshoppers, the army cutworm is doing damage to grains, especially corn, and a large variety of bugs are working on the trees and shrubs.

Garden City:

The first four days of the week were unusually cool for this season of the year, the maximum temperatures running 50, 61, 49 and 51 respectively, with minimum temperatures of 36, 38, 42 and 41. A total of .71" of precipitation fell during this cool period.

Milo and Freed's Sorgo are up to a good stand on most plats but the other crops planted last week have been retarded by the cool weather and are not far enough advanced at this time to enable us to determine the percent of stand that we can expect.

Nearly all winter wheat is fully headed and in bloom. At present it looks as tho we could expect a fair yield this season, especially from wheat on fallow.

About half of the first cutting of irrigated alfalfa is in the shock and the remainder will be cut the first of next week. It is estimated that the field will average nearly two tons of hay to the acre, which is quite heavy for a first crop.

Maximum temperature 82; minimum 36; precipitation .71"; evaporation 1.077"; and wind velocity (8' anemometer) 13.2 miles an hour, (2' anemometer) 10.5 miles an hour.

Havre:

Climatic conditions during the past week have been somewhat variable, but in general have been suitable for the growth of crops. There were two showers on the 3rd and 4th, amounting to .11 inch. The minimum for the week of 34 was recorded on the 2nd. In many localities there was frost at this time which injured tender vegetables. A maximum of 87 was recorded on the 5th. Wind velocity has been higher than normal.

Spring grains have responded to the rain of the 29th. The seed that did not germinate until after this rain is now thru the ground. Corn is mostly through the ground now with indication of a good stand. Winter rye on the station as well as in the locality will be a very poor crop. A large part of it has been clipped, the growth being too light for hay. None on the station has been clipped but there are a great many blasted heads. Winter wheat on early fallow is in good shape, as well as that on corn land. That on late fallow, green manure and continuous cropping will be very light and short.

Rye and sweet clover were turned under during the week for green manure. The growth was very light. Alfalfa in rows has apparently reached its maximum growth and will be cut soon. There will be no cutting of brome or slender wheat grass.

Hays:

Maximum temperature 78; minimum 43; total precipitation, including several showers, .92 inches. It might be added there were traces recorded on two other mornings. Even though there were a few showers during the week, there was also more sunshine than has been recorded for several weeks, and gentle breeze a couple days. The sunshine and breeze was very beneficial to the winter wheat. Also the sunshine started the corn to growing.

Hays, cont'd:

Barley, Oats and spring wheat continues looking very promising. Barley is heading very rapidly, large percentage of it already headed. Oats are just beginning to head. Winter wheat is still heading slowly. A fine stand of alfalfa is up. This is from the second seeding. Peas are just beginning to bloom. The few straggling plants of brome grass (old sod) is headed. The brome grass seeded this spring is looking fine.

During the first of the week a liberal application of poison bait (bran mash) was made over the project to kill the "variagated cut worms" (which was first thought to be army worms) and grasshoppers which are hatching out rapidly. Considerable damage has been done to the second crop of alfalfa on the general farm by these worms. Thus far no damage has been done on the Dry Land Project.

During the week soil moisture samples were taken on the moisture conservation series of corn and kafir. Corn was weeded, some fallow plats plowed and roads cultivated.

Hettinger:

Planted all corn for the second time on D.L.A. and flax Rotation plats. The cut worms took the first planting. Sowed fifteen acres of millet on general farm field for hay. Cultivated trees and alfalfa.

Trimmed all plats and graded driveways. Cut all alfalfa on June 6th and raked and bunched on the 7th.

The past week has been very dry and windy which caused a rapid evaporation of moisture. The crops were beginning to suffer from the drouth, but were relieved on the 8th by a steady rain which measured .55". It is still cloudy and promising for another shower.

Maximum temperature 65.7; minimum 39.3; precipitation .55.

Huntley:

Though the weather has been somewhat more cloudy and cooler this week than last, no precipitation of consequence has fallen. Crops that were not dried up beyond recovery have picked up a little and taken on a better color. Spring grains are burning some but are in much better shape than winter wheat, which, with the exception of a few fallow plats, is practically dead. Corn on spring plowing is badly tip-burned and some plats will have to be replanted in spots where the stand is killed out.

Hogs on the perennial pastures made small gains during the last period. The forage is either closely grazed off or dried up so as to be unpalatable and unless we get rain soon the animals will be removed.

All row crops were cultivated during the week and roads and alleys are being hoed.

Maximum temperature 95; minimum 34; precipitation .02".

Judith Basin:

Unusually dry weather still continues here. The precipitation

Judith Basin, cont'd:

for May amounted to .73" which is only a little more than one fourth of the average precipitation for that month. The total precipitation for April and May was .9" while the total precipitation for these two months has exceeded two inches in all previous years since records were first taken in this vicinity in 1898. Naturally the ground is very dry and crops are suffering for lack of moisture. Some of the fields already have a yellowish tinge, and even weeds are not at all conspicuous this year and are growing very slowly. Farmers are generally optomistic, however, and hope for rain this month.

Work at the station during the week has included plowing land for summer fallow, hauling some of the larger stones from the alfalfa field and grain stubble, and removing limbs infected with canker from Poplar trees. The trees around the station buildings are looking very good indeed, considering the dry weather.

Mandan:

Horticulture.

All experimental plats have received the second cultivation and they are all in excellent condition now.

The pruning called for was performed in the experimental shelterbelt plantings.

Notes on winter injury and stand have been taken on all plantings. The pruning out of dead wood on all plants suffering winter injury was begun.

Strawberries and wild grapes have been in bloom all week. Considerable fruit has set on plums, sandcherries, juneberries, apricots, bush fruits, pincherries and chokecherries.

Blocks 4 and 8 in the hardiness experiment were manured and plowed.

Agronomy.

Corn in the rotations was harrowed the fore part of the week.

About 15 acres of sorghum has been planted for feed. The soil is very dry and it is apt not to come up until a good rain comes.

Crops are in very good condition to date but will be needing rain soon.

The total precipitation for May was 3.95 inches or about 1.5 inches above normal. The yearly precipitation to date is about 1 inch above normal.

The fore part of the week was cool. A light frost on the night of the 2nd did some damage to corn but not enough to influence the crop.

Maximum temperature on the 6th, 76; minimum 32 on the 2nd; precipitation 0.0.

Cooperative Grazing Experiment.

The cattle were divided early in the week and put into the various pastures. The cattle average about 800 pounds per head.

Vegetation has made a very good growth the past month as indicated from the clipped quadrats.

Mandan, cont'd:

Arboriculture.

Field work has consisted in cultivating and hoeing the various fields of conifers and tree seedlings.

Office work preparatory to inspection work is continuing and should be finished sometime next week, when inspection will begin in the surrounding territory.

North Platte; report for two weeks ending June 7:

The last half of May was quite dry. Rainfall for the month was 2.35 inches, all of which came in the first two weeks. The deficiency for the month was .71 inches. Three inches of rain fell from May 30 to June 2; 1.99 inches of this came in a single rain, which was the heaviest for several years. Before these rains, some winter wheat fields in the vicinity were suffering badly for moisture. On the station D.L.A. plats the crop was quite badly fired on continuous wheat and slightly fired on some corn stubble plats. Cut worms are doing considerable damage to corn. Rye on green manure plats is being plowed under today.

Scottsbluff:

On June 1 and 2 this section was visited by a very severe freeze. All vegetation was nipped to a certain extent but corn, being about 6 inches high, was damaged the worst, being froze right to the ground. However, the few days of warm weather following has started new growth and it will not be necessary to replant.

A round of moisture determinations was completed on the M.C. series of spring wheat. Very little moisture if any was present below the second foot.

Potato varieties were planted on the odd plats the first of the week.

Winter wheat plats have become very dry and the wheat is beginning to head out about 10 inches high.

Winter rye having obtained a height of between $3\frac{1}{2}$ and 4 feet was plowed under during the week, making a very satisfactory green manure crop.

Maximum temperature 82; minimum 30; evaporation 1.222 inches; precipitation .21 inches.

Sheridan:

The first five months of this year have been a series of broken records as to weather conditions. The mean temperatures for these months have all been equal to or above normal, no month has gotten its normal precipitation, and January and May shattered all previous records, (26 years) as to maximum temperature for the months. The highest temperatures previously reported for January and May were 60 and 91 respectively while this year they were 62 and 96. Normally on June 1 we should have received 7.36 inches of precipitation; we have received 2.63, leaving a shortage of 4.73 inches. In May we received .99 in. while normal is 2.74 inches.

Sheridan, cont'd:

With the above conditions this year, it is not surprising that some crops are suffering, but it is surprising that more of them are not suffering worse than they are. We have about 13 winter wheat plats which apparently cannot be benefitted by rain, as they are beyond help. These plats are corn, oats and winter wheat, with winter wheat stubbled in them. Summer tilled and green manured winter wheat plats are hanging on wonderfully, although they are burning some. All winter wheat plats are heading. Some of the spring wheat, oats and barley plats are also suffering, the burning being more pronounced on oat plats, but without regard to method of tillage. Alfalfa made a good growth until recently and originally stood about a foot high. This foot has receeded to about 8 inches, and a good share of the leaves are rolled up and dead. Aside from the crops mentioned but little burning has taken place.

Flax planted about May 15 has very spotted stands due to moisture shortage, but is making a satisfactory growth. On the night of the first we had 4 degrees of freezing or 28 minimum. Beans froze out and were replanted, also a few garden crops. Corn and potatoes froze back to the surface of the ground, but are coming again. The corn did not all freeze out, but just here and there with no particular reference to location in the field, as as much was frozen on high ground as was frozen on lower land and in draws. Cereal crops apparently were not affected, not was sorghum, millet or sudan grass.

Another interesting study was in the shelterbelt. At least 50 per cent of the ash trees had close to 1/3 of their leaves frozen. Here and there was American Elm, Golden willow and Northwest poplar, with a few leaves nipped, but no Box elder or Chinese elms showed any ill effects of freezing. All varieties of trees of plantings previous to the spring have grown a foot or more this spring, and still have a good supply of moisture under them.

All row crops on the station were given the first cultivations during the week, all roads worked down smooth, all boundry stakes from plats removed, and identification stakes of nearly all plats put into place. All alleys have also been cultivated. Between cultivation and freezing, weeds have been thinned considerable, during the week but there are lots of them still. The freeze which killed potato tops did not kill the bugs on them, so these bugs are at the surface waiting for the potatoes to come up again. There being no tops to spray with poison, we resorted to the hand method of picking them one by one.

We are connected onto the telephone line passing the station. A number of repair jobs about the buildings are now being done, and a few small inprovements here and there.

Weather conditions as shown by data collected were as follows: Maximum temperature 90; mean maximum 72; Minimum 28; mean minimum 40; evaporation 1.617 and average wind velocity 5.3 miles; Precipitation T.

Tucumcari:

The first half of the week was unusually cold for this time of year, the temperature having gone as low as 37 degrees. There was also considerable wind on these days and we had to stop planting and get over planted

Tucumcari, cont'd:

fields as rapidly as we could with the disc or harrow. An examination made this morning showed that for the present most of the stuff which has come up is safe, but practically all of it has been more or less seriously set back. If we do not get rain now for about two weeks most of the crops, with warm weather, will be past danger from short periods of soil blowing. We have good stands of most of the crops which we have planted on the station. We still have about 15 acres yet to plant which we will get over as soon as conditions will permit. Shrubbery about the station grounds is starting growth in pretty good shape.

The writer made a trip to Nara Visa yesterday and purchased Odetta's Ladd sired by the noted show bull Follies Lad, he by Prime Lad who was two times grand champion at the International. He will be brought to the station on Monday of next week and used in the livestock work we are doing here. We now have five head of fine white faced calves--a heifer, calved this morning weighed 83#. The calves from the cows which we fed last winter have so far run considerably heavier in weight than those from the fed-cows not fed silage and cowpea hay.

Mr. E. F. Chilcott, Benton Rothgeb of the Cereal Office, and a number of State County Agents and Extension men were station visitors during the week. Many local people now visit the station to look at the livestock who have not visited the farm before for several years.

Maximum temperature 89; minimum 37; wind velocity 6.0 miles; precipitation .03".

Woodward:

The first three working days of this past week were very cold following our rain of .55 inches on Sunday. Crops have consequently made little progress this past week and seeding has been at a standstill until Friday and Saturday. On these two days the Cowpea varieties, the Cotton varieties and the Drug Plants were seeded. Parts of the farm began blowing on Thursday and some cultivating had to be done to thwart this. The outside work has consisted mainly in fighting weeds, the cold weather in no way interfering with this work.

Wheat is now out in full head and looks fully a hundred percent better than it did ten days ago. Rust, which was showing so badly ten days ago, has apparently been overcome by the wheat, which shows exceptional vigor now that it is out in head.

Much time was spent this past week in the Vineyard, thinning and tying up the branches. It appears that we will have a good crop of grapes this year, and something as to the relative value of the various varieties should become apparent.

Maximum temperature 85 on the 7th; minimum 44 on the 2nd; precipitation .55 inches.

Williston:

The weather continues dry, the last rain having occurred just four weeks ago today. Hot weather above the normal in the last half of May, for eleven days the maximum averaging over 90 degrees, has seriously affected

Williston, cont'd:

the crops. The early small grains are withstanding the drought fairly well as yet, however, rye is headed short and is very thin and will be a total failure unless it rains very soon. The plats are looking fairly well as yet, altho the corn is very noticeably at a standstill.

Water was put into the ditches under the local irrigation project the first part of the week, and irrigation is now in full progress.

Archer, report for two weeks ending June 7:

The dry weather has continued throughout the past two weeks with only a few small showers. Last month was the driest May in the history of the station, only .31 inch precipitation. Small grains have made no growth during the last two weeks. Oats and wheat are burning. Corn on the rotations is up with a pretty good stand but is not growing. A freeze occurred on the 3rd which set the corn back a little.

Maximum temperature 84; minimum 27; precipitation .12 inch; average wind velocity 5.8 miles per hour.

JUN 1919
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# WEEKLY STATION REPORTS

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# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

JUN 14 1919

REPORT FOR WEEK ENDING JUNE 14, 1919.
(Except where otherwise indicated)

Akron:

The past week has been dry with moderate temperatures. Small grain has recovered rapidly from the effects of the drought during May and if conditions continue favorable until harvest will make fairly good yields.

Corn and beans are recovering from the frost the first week in June and are in fairly good condition although a little later than normal. Cut worms have been unusually destructive this spring and many fields have been replanted. But very little damage was done by them to the corn on the Station.

Mr. C. W. Warburton visited the station on Wednesday.

Amarillo:

The past week has been cool and cloudy with 2.65 inches of precipitation. On the night of the ninth we had 1.75 inch of rain and hail in about an hour and a half. The hail did not do much damage in the part of the field near the buildings, but considerable damage was done on the D.L.A. plats. Oats suffered the most, not very much of the straw was broken, but the heads were badly shattered. The CC winter wheat was scarcely hurt at all but the spring wheat and the wheat on the rotations did not get off so lightly. A good deal of the straw was broken especially on the two year rotations. Milo and corn which were well up were considerably cut up, but are now recovering nicely. Kafir which was just coming up was driven back into the ground but is now doing nicely. Cowpeas came up just after the storm and were not damaged.

No field work has been done except one days soil sampling and a little hoeing.

Maximum temperature 91 on the 7th; minimum 48 on the 10th; average wind velocity hourly 5.8 miles per hour; evaporation 4' tank 2.607, 8' tank 2.008; precipitation 2.65.

Archer:

Warm dry weather prevailed during the past week. As a result of the long continued drought all crops are practically ruined. Corn on the rotations was planted again on June 11 but it won't come up until we get some rain. About 20 acres of fall rye is being cut for hay. The yield is very light.

Mr. C. W. Warburton of the Cereal Office visited the station Thursday and Friday.

Maximum temperature 88; minimum 40; precipitation .06 inch; average wind velocity 5.2 miles.

Big Spring:

The fore part of the week was quite wet. Sunday evening and night we had 1.66 inches of rain. From four P.M. Monday to seven P.M. the same day 2.13 inches of water fell. The rain Sunday evening was preceded by a very high wind that did considerable damage to crops on the sandy

Big Spring, cont'd:

land farms north of us. The rain Sunday night and Monday fell in a very short time and caused the soil to wash badly. The center portion of two of the roadways running north and south through the c.c. and rotation plats was swept clean of loose dirt and washed out to a depth of twelve inches in places. The date plantings made on June 1 was washed out entirely and had it not been for the fact that most of the plats were planted early, the damage to the crops would have been very bad. On many of the farms in the county, the late planted crops were either washed out or covered up entirely. While we regret to lose the date planting made on the 1st we consider that we are lucky that it was no worse.

Milo planted in April is starting to boot and will probably begin to head out in a couple of weeks. Millet planted in rotations 217 and 218 is out in full head and over knee high. Hickory King corn planted on April 4 is beginning to tassel. Sudan grass on several of the plats is waist high and will do to cut by July 1. The nights are getting much warmer and all crops are growing rapidly. Cotton is recovering from the bad effects of the past cool weather and is beginning to grow.

Maximum temperature 96; minimum 55; wind velocity 6.3 miles; precipitation 3.79 inches.

Colby, report for two weeks ending June 14:

Comparatively cool wet weather has prevailed since June 1. Precipitation has been received 7 days out of the 14 with heavy rains of 1.08 inches on the 3rd and .61 inch on the 8th. Since May 30, when the rains began, a total precipitation of 4.13 inches has been received and only .33 of this amount occurred in rains of less than .50 of an inch. Very little run off has taken place and the soil has absorbed practically all of the moisture.

The continued cool wet weather has been fatal to listed milo and feterita but milo planted with a corn planter is slowly coming up and a sufficient stand will apparently be secured. Corn is making but little growth but all other crops are doing extraordinarily well. Winter wheat, barley and oats have headed out and spring wheat is heading. Some winter wheat, however, is lodged rather badly but most of it will rise again if the weather turns a little warm and dry in the near future. Considerable rust is making its appearance on the leaves of spring and winter wheat but only a very little of the stem or black rust stage is present.

Due to the wet condition of the soil, field work has been impossible a greater portion of the time. Replanting of the listed milo and feterita plats was completed. Barley was rogued out of the oat plats and some hoeing was also done on the D.L.A. field.

Maximum temperature for the two weeks, 84; minimum 38; precipitation 2.30 inches.

Dalhart:

This has been some week and full of disappointments. We had expected

Dalhart, cont'd:

to get all of our planting finished this week but on account of weather conditions we were unable to do the planting. We were all ready to begin planting Monday but on Sunday evening we got a hail storm with rain enough to keep us out of the field next day. All day Monday the sun shone and there was not a cloud to be seen until about 6 P.M. when it clouded over suddenly and we got a heavy dashing rain which amounted to nearly half an inch. This put the planting off some more. It took two days for the soil to dry out so we could begin work again. We were expecting to begin Thursday morning but Wednesday about dark we got another shower and we were kept out that day. We finally got to begin about noon Friday and we kept planting until this evening. We have all the D.L.A. project planted but the sudan on three plats and we will plant it after some of the other plantings are finished as this will make with later planting.

Our oats are growing the best in the world. If we do not get hailed out I believe we will get at least 200 or 300 bushels for feed and possibly more. People here state that they are the best they have seen out here. Wheat is looking good and is in the milk. Rye will be ready to harvest next week. It could have been harvested this week if we could have gotten to it today but that was out of the question. The wheat and oats are affected very slightly with rust.

Maximum temperature 87; minimum 50; evaporation 1.713 inches; average hourly wind velocity 5.8 miles; precipitation 0.63 inches. This does not look like very much rain but when it comes on a soil that is already pretty well saturated it stays wet longer.

Edgeley:

The weather has been warm and cloudy. All classes of crops are late and backward. The rye crop is thin and in many instances will not make half a crop. Most of the wheat, oats and barley is very weedy. Some of the farmers in this district are just finishing planting corn. Grass crops are doing well and furnishing stock abundant forage.

Soil samples on all the plots where sampling has been practiced, has been completed.

Maximum temperature 85; minimum 43; precipitation .45 inch.

Garden City:

Winter wheat is burning badly, due to the continued dry weather and to hot, dry winds that have blown almost constantly during the past week. Spring wheat is making an excellent growth and apparently is not affected by the adverse climatic conditions that we are now having. Barley and oats are heading. Oats are very short and it will probably be necessary to harvest them with the mower.

Corn is making a rapid growth on all surface planted plats. Listed corn emerged several days later than surface planted and seems to be making a slower growth at present. Surface planted sorghums are up to a good stand in most cases but army worms and grasshoppers are rapidly reducing the stand over a considerable portion of the fields. This is

Garden City, cont'd:

especially true on the moisture reduction series that lies just across the roadway from our alfalfa field. Milo seems to be making a stronger growth than any of the other sorghums.

Pinto and Tepary beans were up to a good stand but have been entirely destroyed by grasshoppers and will have to be replanted.

Irrigated alfalfa was cut the latter part of last week and the fore part of this. It averaged 2.4 tons to the acre. This is an unusual yield for a single cutting but climatic conditions early in the season were very favorable for alfalfa and the heavy yield resulted.

Grasshoppers are more numerous than usual this season and army worms are also doing a great deal of damage throughout this section, as well as in the Eastern part of the state. We put out poison bran mash on two different days during the past week and are well pleased with the results obtained. It will be necessary to continue the poisoning from time to time as hoppers are continually coming in from outside sources.

Maximum temperature 90; minimum 51; precipitation .25"; evaporation 1.952"; and wind velocity (8' anemometer) 12.4 miles an hour, (2' anemometer) 9.8 miles an hour.

Havre:

Crop conditions have much improved in this part of the state during the last week. Precipitation was recorded on 5 days beginning on the 9th. On the 12th there was a slow rain lasting about 4 hours in which .60" fell. There has been quite a little cloudy weather with moderate temperatures. Maximum temperature 77 on the 10th; minimum 43 on the 12th; precipitation for the week 1.11. This rain is too late for a great deal of the winter grain. There are still a few fields where there happened to be moisture left from last season and a very small area on fallow that will now make a crop. A great deal of the land that was in rye and wheat is being seeded to flax. Some of the early seeding of spring wheat will hardly make a crop because of the thick growth of Russian thistles. The late seeding of spring wheat and the flax is looking fine now, a great deal of it just coming thru the ground at this time. 80 acres of winter wheat on the station is looking good but the straw is short. Some of the early seeding of Durum wheat is showing boot at a height of about 15 inches. The plats have greatly improved as to stand during the week.

Hays:

The weather continues showery. A rain storm occurs at least once or twice a week with sufficient wind to lodge the heavy growth of all small grains. Between storms the spring grains have about time enough to raise up and begin to look fine, when another storm takes them down. How long they can hold out if the season continues the same is only a guess. The winter wheat fails to raise up like the spring grains. It raises up some after each storm, but not quite so straight as before. In other words, it is losing some each time it goes down.

During the week the corn plats were all cultivated, the corn was thinned, some soil samples were taken and some hoeing was done. Also a coat of paint was given the field granary.

Maximum temperature 88; minimum 55; precipitation, three showers giving a total of 2.38 inches.

Huntley:

Cooler weather and a light shower have freshened up crops to some extent. Spring grains are making very slow growth and the indications are that oats and barley will soon be heading on very short straw. Winter wheat on fallow, pea-fallow and corn stubble is now fully headed. These are the only methods on which a crop of winter wheat will be harvested.

Peas, rye and sweet clover were plowed under during the week. Rye and sweet clover plats were extremely dry but the pea plats plowed up moist.

Four plats of corn were entirely reseeded and a number of others were partially reseeded. On these plats much of the corn germinated and made a small growth and then died. All plats so treated were spring plowed. The stand of corn on fall plowing is very good.

Hogs were removed from the brome grass pastures and the test closed for the season. The forage was grazed very closely and making practically no growth. As a result pork gains were light.

Mr. J. M. Stephens and Mr. P. V. Cardon are visiting the station today.

Maximum temperature 90; minimum 41; precipitation .16".

Judith Basin:

A rain of .26 inch fell on June 26, but was not sufficient to wet the dry ground to any great depth. It made crops look a little better for the time being, but the ground will soon be as dry as ever unless more rain comes. According to Tom Nicholson, an old settler in this region, there has not been a year anywhere near as dry as the present one since 1889.

No serious burning has taken place on the rotation plots, as yet, but all grain is very short. Grain on summer fallowed plots looks decidedly better than grain on other plots in the continuous cropping series. Grain following grain on spring plowed land seems to be about the poorest method this year.

Rye plots were plowed under on June 9, the average height of the rye being only about 18 inches. Corn plots were given first cultivation on June 14.

J. M. Stephens was a visitor at this station on June 10 and 11.

Maximum temperature 79; minimum 38; precipitation .52 in.

Lawton, report for week ending June 7:

The past week has been cold and cloudy with the exception of about two days. The minimum temperature for the week was 49 and the maximum ranged from 59 to 91. The precipitation for the week is as follows: June 3--0.02"; June 4--0.31"; June 6--0.57"; Total 0.90". Considerable hail fell during the rain of 0.57" on the evening of the 6th. but no serious damage occurred on the station. Corn and broom corn were pretty badly riddled but the wheat and oats seemed to have suffered no particular damage.

Lawton, report for week ending June 7, cont'd:

Reports from the southeastern part of the county indicate considerable damage to all crops, especially wheat and oats. Some of the rowed crops in that section will also have to be replanted.

All planting on the station except future date stuff was finally completed during the week and cultivation has progressed so that everything is in pretty good shape.

Wheat and oats are gradually maturing and present indications are that they will ripen about the same time this year. Both crops average about 4½ to 5 feet in height and are well filled. Harvest has already started in the county but is confined just at present to soft wheat.

The Army Cut worms have pretty well disappeared during the week except in some of the more tender and succulent crops. Poison bran mash was used quite effectively on the small grain plots where the infestation was heaviest.

Mandan:

Horticulture.

Pruning out dead wood was continued during the week.

The first pruning was done on the experimental shelterbelts where such pruning is called for.

Three propagating frames, 6 x 12, were prepared with sand for experimental work in propagating fruits, trees and shrubs from soft wood cuttings.

A number of crossed fruits have ripened in the greenhouse and have been picked and planted. Some of the plums measured six inches in circumference.

All plums have been sprayed for plum curculeo and currants and gooseberries for currant worms.

Summer pinching of young shoots was done on all apples and plums to be grown in bush form in the nursery.

Agronomy.

Fallow plats were plowed and harrowed the fore part of the week.

Corn in the rotations and the corn varieties have been given the first cultivation.

Cut worms have been working in the flax plats and have taken a good deal of some plats. Reseeding will no doubt be necessary.

Maximum temperature 92 on the 12th; minimum 36 on the 8th; precipitation 0.45".

Cooperative Grazing Experiment.

Vegetation is still making a good growth and pastures are in excellent condition. Quadrats were clipped during the week and these showed that a heavy growth had taken place during the past three weeks.

Units in the Isolation Transects have been fenced and opened for the season.

Arboriculture.

Hoeing and cultivating has been resumed to keep ahead of the weed

Mandan, cont'd:

growth among the seedling trees.

Office work in connection with the summer inspections is about completed and trips will be made in the surrounding counties during this next week.

North Platte:

The week opened with a storm in which the precipitation was the heaviest recorded for a single rain for a number of years. The hail gauge on the table contained 3.90 inches, the rain gauge beside it 2.15 inches and the rain gauge on the bench 1.57 inches. The hail gauge reading is probably the most accurate. If this reading is used, the total thus far in June is 4.22 inches or .97 inches greater than the normal for the month. Some washing took place on the plats and winter wheat was badly lodged. Most of the wheat has since come back up. It is in full head and the first heads are appearing on early oats.

Scottsbluff:

The drouth here continues unbroken. Hard winds have occurred most every day during the week and the evaporation has been very high. Winter wheat plats have burned badly and without rain soon will be beyond recovery. However, those plats on summer fallow still look promising. The same is true of spring wheat and oats.

Corn at present is looking fine, having revived completely from the hard freeze of last week. All corn plats were cultivated during the week.

Plats for summer fallow were plowed under the first of the week.

Alfalfa plats in Rotation 42 were harvested the first of the week. The yield was very light.

Maximum temperature 88; minimum 47; precipitation .17 inches.

Sheridan:

On the 10th and 11th we received 1.04 inches of precipitation in two showers. With the last one which came in the afternoon, there was considerable hail, but it had rained about 10 minutes before the hail begun, so the damage done was not as great as had it been otherwise. The corn leaves were split badly, and beat to the ground while a good many wheat and oat leaves were stripped from the plants. Winter wheat, however, which was in full head, was damaged very little, with only a head here and there bent over. There was considerable run off and washing from and onto some of the plats. It was noted, however, that at the north end of the station the hail was very heavy and did considerable damage at the north end where it was very noticeable.. A half mile or so north of the station the hail was very heavy and did considerable damage to crops. However, this rain, even though it was accompanied by hail, was worth many thousands of dollars to this section of the county as it was quite general, and there has been very little rain in the county this spring.

Sheridan, cont'd:

There is so little water in the streams for irrigation, that waterrights subsequent to 1884 are getting no water whatever, and those who are receiving water are grtting but a small head. Many thousands of acres of crops on supposedly irrigated land are on a dry land basis this spring, but are now saved by the recent rain, or at least will recover from the drought.

Oats are heading, and spring wheat is in the top of the boot. Barley is also heading. Winter wheat is fully headed now and is filling. During the week all of the alleys between plats and the shelterbelt were cultivated, and the remaining weeds left in the shelterbelt were removed with a hoe. Sweet clover on the forage field has been cut for hay, and is now being weighed.

The following are the weather conditions for the past week as shown by data collected: Maximum temperature 96; mean maximum 80; Minimum 42; mean minimum 47; evaporation 1.499; average wind velocity 6.4 miles; precipitation 1.06.

Tucumcari:

The week has been showery with considerable cloudiness and wound up with a torrential rain of 2.55", most of which fell in about 1½ hours. An examination of the station fields this morning showed that a large percentage of the crops which were up had either been covered up or washed out. Some of the fields are also badly cut up and will require cultivation before replanting can be done. Replanting will probably not be attempted before the middle of next week. Field work for the week consisted of cultivating to control soil blowing and putting the station grounds in order. We had excellent stands of practically all crops but these were making little headway against the daily soil blowing we have been experiencing. A great many of the ranchmen have not yet planted any crops owing to heavy rains and soil blowing. Winter wheat on the plains which came thru the spring without serious injury is reported to be excellent and good yields are expected. The growth of straw is too heavy on many fields and there is danger of lodging.

On the afternoon of the 11th a crowd of about 125 people composed of teachers, business men, and a boy scout band visited the Station. After looking over the farm, refreshments in the form of ice cream were served.

Maximum temperature 90; minimum 53; wind velocity 5.3 miles; precipitation 3.33.

Woodward:

Rain again interfered with field work the fore part of the week but a hard drying wind came up from the Southwest on Wednesday which was soon blowing the soil and seriously threatening to damage the crops. All of the teams were put into the field immediately and kept there until six o'clock by which time all the blowing spots had been cultivated. Cultivating has been the field work holding our attention since that time. All the Cereal Office varieties have been cultivated and all the rotations with the exception of a few listed plots. We still

Woodward, cont'd:

have some seeding to do, which will be the field work to next hold our attention.

Moles have been very active this spring and have caused some damage despite our active measures of suppression. Grasshoppers, too, are numerous in the alfalfa and threaten to do serious damage unless our efforts at poisoning prove effective.

Wheat still promises to make more than average yield.

Maximum for the week 85 on the 13th; minimum 59 on both the 9th and 10th; precipitation 1.13 inches.

Bellefourche:

The weather still continues hot and dry. Small grains on green manured land and on fallow is still in fairly good condition. Small grain on continuously cropped land and on land where small grain or a sod crop has been grown is now badly damaged.

Alfalfa, brome and clover were cut during the week. None of the plats were over six inches in height.

The grass on the range has practically all ceased growth and the supply of water is getting low. Unless conditions change for the better soon a large amount of stock will have to be shipped out.

Maximum temperature 97; minimum 46; precipitation .08 inch.

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# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

JUN 21 1919

REPORT FOR WEEK ENDING JUNE 21, 1919.
(Except where otherwise indicated).

Akron:

The past week has been dry and warm. Corn has grown rapidly. Spring wheat and oats are suffering from drought and are heading. Barley and most of the winter wheat on the Station are in fairly good condition.

Corn was cultivated and a part of the summer fallow plowed during the week. The kafir plats were replanted on the rotations. Alfalfa is being cut today. It made a good growth during April and the first part of May but has made very little growth the past month.

Maximum temperature for the week 96; minimum 54; precipitation .43".

Amarillo:

The past week has been warm and cloudy with .25 inch of rain with more threatened several times. Crops have made quite a growth, corn now being about six inches high. It has been so wet for the past two weeks that no field work except a little hoeing and some road plowing has been possible until the last three days. We tried to take some soil samples on the 16th, but the soil was so wet that it stuck to the inside of the tubes. We were able to get some samples by the 19th although it was still very wet.

To-day the 21st we replanted the listed kafir and milo, four plats of each. The original stand on these plats was not very good and water stood in the furrows for some time after the heavy rains of last week and made it necessary to replant.

Our 6-foot evaporation tank was found to be leaking some time ago. We had a new one made and it is now installed and in operation.

Maximum temperature for the week 84 on the 19th and 20th; minimum 58 on the 18th; average wind velocity 5.1 miles per hour; evaporation 4' tank 1.662, 8' tank 1.261; precipitation .25".

Archer:

Field work the past week has consisted of trimming plats, cultivating alleys, hoeing out the large weeds and putting up rye hay. Dry weather continues with only a few local showers.

Mr. J. O. Belz visited the station Saturday.

Maximum temperature 92; minimum 47; precipitation .22 inch; average wind velocity 5.5 miles.

Ardmore:

Harvesting of alfalfa is in progress. Yields of this crop are poor, ranging from one-half ton to one and one-half tons per acre. The dry weather during the early part of May has resulted in a poor alfalfa and wheat grass crop.

Tilled crops are making good growth. The prospect for a winter wheat crop never was better in the history of the station. Spring wheat is good, but oats are suffering somewhat for the want of moisture.

Mr. J. T. Sarvis is spending about a week at the station.

Maximum temperature for the week 91; minimum 56; precipitation .92".

Bellefourche:

The dry weather continues. The first part of the week was cool but the hot weather returned toward the end of the week. Wheat and oats on corn ground and fallow are still growing. The oats have begun to head. Many of the plats of small grain have had their growth checked so badly that they will never head. Some of them dried up before they commenced to form straw.

Conditions on the range surrounding this section are getting worse all the time. There is still enough feed for the stock but the supply of water is getting very low.

Mr. Dillman and Mr. Sarvis of the Mandan Station were at Newell during the week.

Maximum temperature 95; minimum 56; precipitation .03 inches.

Big Spring:

Late Saturday evening June 14, we had another big rain amounting to 1.65 inches. This rain was followed by very calm and cloudy weather. This condition caused the fields to remain so wet that very little field work could be done during the week. Heavy dews were very much in evidence each morning and frequently the grass would not dry off until noon. This continued humid condition is a very unusual thing for this section of the state.

Wheat in the county that had been harvested and shocked before the rains is badly damaged and unless better weather prevails soon the loss will be heavy. We threshed the c.c. wheat Friday afternoon. By tearing down the shocks and spreading out the bundles, we managed to get them dry enough to thresh, though we had to feed the thresher slowly on account of the straw being somewhat damp and tough. While threshing the plats we found that considerable of the grain had moulded from the continued wet weather .

Maximum temperature for the week 86; minimum 60; wind velocity 3.0 miles; evaporation 1.26 inches; precipitation 1.87 inches.

Yield c.c. wheat: Plat A--2.3 bu. per acre; Plat B--1.6 bu. per acre; Plat d--11.0 bu. per acre; Plat E--21.3 bu. per acre; Plat F--23.6 bu. per acre; and plat G--9.5 bu. per acre.

On account of the heavy washing rains many of the farmers on the sandy land have had to replant their crops. Some of them have planted three times and are still not sure whether they will get a stand or not. One man stated that he was replanting for the fifth time and if he did not secure a stand this time would quit trying this year. On account of the high price of feed it is very hard on the farmers, as most of them have raised very light crops the past two years.

At five p.m. today June 21, we had another hard rain amounting to 2.20 inches. Most of this rain fell in a very short time and caused a great deal of run off. From June 1 to the 21 inclusive, we have had 8.16 inches of rain.

Colby:

In contrast to the cool wet weather of the first half of the month

Colby, cont'd:

the past week has been clear and very warm with only one light shower. The humidity, however, has been unusually high for this section of the country.

Corn is making an extraordinarily rapid growth. Listed milo replanted last week is coming up with good stands on most of the plats. Surface planted milo is making fair progress and a sufficient stand has been obtained on all plats except MCD which was replanted during the week. Winter wheat is beginning to ripen and most of the lodged grain has recovered sufficiently to be easily harvested with a grain binder.

Corn was thinned and cultivated during the week. Roads were mowed and cleaning up of the alleys commenced.

Dean F. D. Farrell of the Kansas State Agricultural College visited the Station early in the week.

Maximum temperature 86; minimum 58; precipitation.17 inch.

Dalhart:

The past week has been much more favorable to crop growth. Most of the time it has been quite warm during most of the day and crops that were planted last week are up already. We were able to finish all of our planting this week in good shape, We have a good stand of everything that is up from the last planting. The date plantings up to and including June first are not so good a stand as the later seeding. From what I have been able to find out we are the first to finish planting. The farmers that planted early are behind with their seeding as they have to plant over, and the ones that waited as we did have a good area to plant yet. We have been having local showers that have delayed planting in different localities somewhat but on the whole everything has been lovely. Our cowpeas, corn, milo and peanuts are up and the kafir is showing above ground in some places. We have finished harvesting the rye and the field of shocks resembles a corn field, the shocks are so high. The shocks stand nearly six feet high. We will harvest the wheat this coming week if the weather remains favorable. The oats have some smut present but not to any extent.

We have done considerable mowing this week. The weeds were getting pretty high along roadways and we cut them with the mower. The meadow in front of the teamsters cottage was mowed also. This will be raked the first of the week. With this work done the station looks pretty clean. Our hay rake arrived just in time for good work. The cultivators are here and we have done some cultivating.

Maximum temperature 85; minimum 59; average hourly wind velocity 4.7 miles; evaporation 1.284 inches; precipitation 0.17 inches.

Dickinson:

Hot dry weather has continued and all grain and hay crops are showing marked effects of drought. Oats and barley are heading about ten days earlier than the average and are very short. Cultivated crops still look good although corn is showing some effect of drought. Alfalfa and

Dickinson, cont'd:

brome in the rotations were cut for hay June 19, the yield of both crops being very light. Rye and sweet clover for green manure was plowed under on the 20th. Grasshoppers are still numerous in the community although immense numbers have been killed with poison. Young ones are still hatching while these farthest advanced are beginning to fly.

C. N. Ainslie of Cereal and Forage Crop Insects, Bureau of Entomology, Professor J. H. Shepperd of North Dakota Agricultural College and U. J. Downey, Superintendent of the Hettinger Sub-station visited the station during the week.

Edgeley:

Cloudy, muggy weather prevailed throughout the week. Corn is backward, but cereal crops are making rapid growth. Alfalfa hay on the plots has been cut, but the rain has delayed haymaking. Grasshoppers are doing considerable damage to crops a short way from the station, but are doing very little damage on the Station fields.

Maximum temperature 97; minimum 47; precipitation 2.39 inches.

Garden City:

The past week has been unusually warm and dry. We need rain very badly, especially for small grain. Winter wheat is ripening prematurely and if the hot winds continue it will be necessary to harvest it the latter part of this week. Spring wheat was more than holding its own until the last few days, but is firing now and unless rain comes soon the crop will be very short. Barley and oats are far enough advanced to produce some grain even tho the dry weather continues.

Cowpeas, beans, and two listed plats of kafir were replanted during the week and millet will be replanted the first of next week. The first planting of beans came up to a fair stand but were entirely destroyed by grasshoppers.

Grasshoppers continue to come in from outside sources and although we have put out poisoned bait on three different dates, we still have hoppers in sufficient numbers to do considerable damage. They seem to be especially fond of beans, cowpeas, barley and wheat. The variegated army cut worms are doing a great deal of damage throughout this section of the country. Most of their damage on the station has been confined to the alfalfa and moisture reduction fields. Colorado potato beetles and several species of blister beetles have made their appearance and are working on potatoes for the most part. We are spraying with lead arsenate in an effort to control them.

Fallow plats were plowed and harrowed during the latter part of the week. Double discing these plats earlier in the spring just as weed growth had started put the ground in excellent condition to carry over and altho we are nearly two weeks late with our plowing, the land turned over as mellow as one could wish and much better work was done than was the case with the plats fallowed last season.

Garden City, cont'd:

Maximum temperature 90; minimum 60; precipitation 0; evaporation 1.925"; and wind velocity (8' anumometer) 10.6 miles an hour, (2' anemometer) 8.3 miles an hour.

Havre:

There has been no precipitation during the last week and the temperatures have been gradually increasing. On the 21st the maximum was 100 with rather a strong east and northeast wind. A minimum of 51 was recorded on the 15th. Grain crops that are not weedy and had some prospect a week ago do not show serious sign as yet. Perhaps 75% of the crops in this immediate locality are past redemption, due largely to the thick growth of thistles. The last sowing is not making satisfactory growth. The ground is baked due to the few heavy showers and with the hot windy weather there is very little stooling.

Corn was cultivated during the week. Previous to this we have harrowed and weeded the corn so that there are very few weeds at this time. Stands on some of the plats will not be good. This is caused partly by poor germination and partly due to the Western cut worm.

The Western cut worm is still reported as doing damage to certain localities. In places where they are very numerous they have even cut off all the thistles.

A mass meeting was held on the 21st at Box Elder for the purpose of establishing an irrigation district. The land included was surveyed by the Reclamation Service some 15 years ago and is known by them as the Marias Project. It is proposed to take the water from the Marias by a diversion dam 195 feet high. By making this dam some 15 feet higher and including a storage reservoir at Lonesome Prairie Lake it is thought that sufficient water can be stored to irrigate something over 100,000 acres. Some 3 or 4 years ago there were numerous protests against the project going in, as settlers wanted to get the 320 homestead. However, for the time being, the entire sommunity seem to be back of the irrigation project.

Huntley:

Hot and sultry weather has prevailed throughout the week and but one shower has fallen in the way of precipitation. Spring grains are practically all headed with the exception of wheat on summer fallow. Present indications are that it will be impossible to gather the crops on many of the plats by ordinary machine methods. This is especially true of the oats and barley. Except for a few plants in the border of the plats, alfalfa and brome grass crops are too short go make a hay yield.

Where sufficient moisture is available, corn has made a rapid growth. On many of the spring plowed corn plats the plants are burned and discolored. The replanting has shown no signs of germinating.

The straw mulch has been applied to the garden and potato plats in the mulching experiment. Potato varieties have been thinned and sprayed.

Hogs on the pastured rotation 652 were moved from the rye plat to the pea plat. The rye plat has been pastured to the ground uniformly.

Huntley, cont'd:

This is the first season that the ten pigs have been able to keep the acre of rye pasture eaten down uniformly. The usual practice has been to mow the rye once or twice during the pasture period in order to induce growth, the old forage having become too mature to be palatable. The pasture period of 56 days for this year was one day less than the three year average for the rye plat. The average daily gain per pig was 5.1 pounds, which was lower than the average.

There is a good stand of peas on the plat now being grazed but the plants are very short and it is anticipated that the pasture period will be less than normal.

Temperatures for the week: Max. 98; min. 51; precipitation T.

Judith Basin:

Another hot and dry week has gone by. Maximum temperature of 99 degrees was recorded on June 21, which is the highest maximum temperature recorded since August 1908. June is two thirds gone and up to this time we have had considerably less than one fourth of the normal rainfall for June. As yet most of the spring sown grains still retain a fairly good green color, but several of the winter wheat plots in the continuous cropping series have practically burned up. Winter wheat on summer fallow looks decidedly better than on other plots.

Brome grass and alfalfa were cut on June 18. Most of the plots were total failures, but light yields were obtained from a few. Corn plots were cultivated in the fore part of the week. A poor stand of corn was obtained in rotations 10, 12, 41 and 42, so corn plots in these rotations were replanted on June 16.

Maximum temperature for the week 99; minimum 45; precipitation .14".

Lawton, report for two weeks ending June 21:

Precipitation since the 7th of June has been as follows: June 10--.37"; June 11--2.40"; June 12--.06"; June 15--T; June 17--T; June 20--T; June 21--.63"; June 22--T; and June 23--T; Total 3.46".

During the past week the maximum temperatures have ranged from 78 to 92 but the atmosphere has been very sultry and humid. The wind velocity has averaged less than one mile per hour during the week and heat has been unusually oppressive regardless of the maximum temperatures recorded.

All crops have made very rapid growth and M.C.H. corn is now beginning to tassel.

Wheat harvest in this county is practically completed and the majority of the oats are also cut. Oats usually mature earlier than the wheat but the reverse experience occurred this year. All of the wheat on the rotation plats was harvested on the 16th.and the oats were cut on the 19th. The last two dates of seeding in the rate and date test are now ready to cut. The wheat plats average from six to eight shocks per plat. The growth of straw was heavy and much of it was lodged to such an extent

Lawton, report for two weeks ending June 21, cont'd:

that harvesting was difficult. Wherever manure was applied the yield will be light.

One 14 acre field of oats averages about four feet in height and is so badly tangled that it is extremely hard to cut.

Mandan:

Horticulture.

Pruning out deadwood in the main windbreak has been continued.

Pruning has been completed in the plum orchard and in all fruit plantings.

The potatoes were given the first cultivation and general cultivation was continued throughout the week.

Three frames, 6 x 12, are being planted to soft wood cuttings of fruit and ornamental plants.

About one peck of plum pockets were picked in the seedling plum orchard and burned. All blocks were gone over and all web-worms destroyed.

Strawberries and Juneberries are beginning to ripen.

Some additional fruits of hand crossed plums and apples were picked in the greenhouse.

Agronomy.

The work of the present week has consisted principally in hoeing the alleys in the rotations, and cultivating row crops. The field crops in general are looking well and making good growth. Oats, however, are beginning to show some effect from the hot dry weather. They are already heading.

Blister beetles have been doing considerable damage to one of the drug plants (Lallemantia). They were sprayed during the week with Black Leaf 40, and Lead Arsenate, but with no apparent effect on the beetles.

Maximum 95 on the 18th; minimum 53 on the 20th; precipitation .43".

Cooperative Grazing Experiment.

Breaking with the tractor of the land to be seeded to brome in the pasture work was started. The land is so dry, however, that the breaking was abandoned for the present.

Mr. J. O. Belz of the Office of Biophysical Investigations, Mr. C. M. Woodworth of the Office of Cereal Investigations and Mr. B. S. Olson of the Forest Service visited during the past week at the station.

Arboriculture.

All fields have again been weeded and cultivated.

Mr. Henchel and Mr. Bastine will leave Monday in the car for a short inspection trip.

North Platte:

Good growing weather has prevailed during the week. Showers have occurred in three days, interfering with corn cultivation and hay making.

North Platte, cont'd:

Considerable of the first crop of alfalfa will be of poor quality on account of frequent wettings.

In spite of barberry eradication campaigns, rust is the worst that has ever been known in winter wheat fields.

Scottsbluff:

Prospects for a crop here are growing steadily worse. Most of the past week has been hot and dry. However, a shower amounting to .34 inches fell on June 20 and was accompanied by a violent wind storm doing considerable damage in some places. More than an inch of rain was reported a few miles south of the station.

Weeds, however, continue to thrive very well and most of the week was spent getting rid of them.

Another round of moisture determinations was completed on the corn plats in the M.C. series.

Maximum temperature for the week 94; minimum 53; precipitation .32".

Sheridan:

The weather for the past week is described by the following data collected during the week: Maximum 100; mean maximum 90; Minimum 50; mean minimum 57; evaporation 2.124 inches; average wind velocity 6.9 miles per hour; and precipitation T. There has been a high percent of cloudy weather but it seems absolutely unable to rain.

The most surprising thing so far in this seasons work is the way all crops are hanging on under droughty conditions. Winter wheat, especially that on fallow, seems to be filling normally or nearly so, with but little burning. Spring crops, wheat, oats and barley are all heading out, the stands being considerably thinner than they were earlier in the season, and slose to half of these plats are suffering but little. It is quite noticeable on oats plats, that the fall plowed ones are suffering far more from drouth than spring plowed plats, in fact, but few of the fall plowed plats are heading out except here and there on the plats, this because they are too badly burned. Corn is making a rapid growth now. The rain which occurred about two weeks ago, caused germination of considerable corn which had not come up previously, so we have corn at all stages from coming through the ground to 10 inches high.

All rowed crops on the station as well as the alleys were cultivated the second time during the week, to break a crust that had formed and to give weeds a backset. Most of the week has been spent in putting in our winters supply of coal, which job is still incomplete.

Tucumcari:

The weather during the past week was the most favorable for crop growth that we have had this season. There were heavy rains in some sections of the county but we escaped these. Crops which were not washed out or covered up during the heavy rains of last week are now commencing to show up slightly, and with another week of favorable weather will practic-

JUL 21 1919

# WEEKLY STATION REPORTS

OF THE OFFICE OF

# DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR WEEK ENDING JUNE 28, 1919.
(except where otherwise indicated).

Amarillo:

The past week has been warm and cloudy, with very little wind, warm nights and half an inch of rain in a single shower. It has been excellent growing weather for everything, including weeds.

Two plats of sweet clover were planted on the 23d. We also replanted one plat of cowpeas as the water stood on one end of the plat and prevented about half of them growing. All of the row crops were cultivated the latter part of the week.

Listed milo and kafir which was replanted on the 21st are up with a good stand. Wheat and oats are ripening fast. The Cereal Office has harvested some of their earlier wheat, oats and rye the past week.

Harvest has commenced in the locality. We see new binders, headers and tractors going by the station every day.

Maximum temperature for the week 89 on the 24th and 25th; minimum 60 on the 22d; average hourly wind velocity 4.4 miles per hour; evaporation 4' tank 2.199, 6' tank 1.647, 8' tank 1.834; precipitation .50.

Big Spring:

Maximum temperature 88; minimum 64; evaporation 1.81 inches; wind velocity 2.3 miles; precipitation 2.32 inches. Of the above precipitation 2.13 inches fell late Saturday evening, June 21. This rain fell in a very short time and a great deal of run-off occurred. Several of the plats were washed more or less badly, the late planting suffering the most. The fore part of the week was too wet to do much field work, except hoeing weeds on the more sandy part of the farm. Milo planted in the rotation plats in the latter part of April is heading out rapidly and we have laid this crop by. Sorghum planted in the c.c. and rotation plats is shoulder high and will be very rank this year. The dwarf kafir in the c.c. and rotation plats, as well as most of the grain and sweet sorghums have been given the last cultivation for the season. We have a half acre of sudan grass that will average five feet in height and we expect to harvest it the first of the coming week. Hickory King corn planted on the 4th of April is out in silk and tassel and runs from six to over eight feet in height. This week has been very quiet as regards wind movement and very humid, the dew point running from 67 to 71 the entire week. These conditions have been ideal for crop growth. Peaches are getting ripe now and the wet weather we have had the past month insures that they will be of good size on all the trees of bearing age. Mr. J. M. Del Curto, Assistant Entomologist, of the State Department of Agriculture, of Austin, Texas, was a station visitor on Thursday.

Colby:

The past week has been favorable to crop growth and ripening of small grains. Winter wheat is ripening very unevenly on all of the plats as a large portion of the wheat which was burned badly during the May drought resumed growth after the rains during the first part of June

Colby, cont'd:

and is still green, while wheat which did not suffer so severely from the drought is practically ripe. Barley is maturing rapidly and spring wheat and oats are beginning to turn color. Corn has made more growth in the last week than in the entire previous month. Milo and kafir are also beginning to show considerable development. Feterita replanted two weeks ago failed to come up due to a heavy crust which had formed, so all feterita plats were again replanted.

Kafir and surface planted milo were cultivated during the week, all fallow plats disked and alleys between plats cultivated. Soil sampling was done on the 7 milo plats of the M C series and the determinations show a large amount of moisture to be present in the first 4 feet but the fifth and sixth feet are comparatively dry, containing only from 8 to 10 per cent of moisture.

Maximum temperature 93; minimum 55; precipitation 0.

Edgeley:

Maximum temperature 88; minimum 46; precipitation 0. Windy, cloudy weather prevailed throughout the week. The soil has dried out rapidly from the drying winds. Barley is beginning to head out. Other cereal crops are making rapid growth. Corn is only six to eight inches high. Summer fallows are being plowed now. Green manure crops are also being down. Grasshoppers are doing serious damage to some sections in this district. Farmers are combatting the hoppers by the use of poisoned bait and hopper dosers.

Havre:

Until the 28th, when there was a slight drop in temperatures, the past week has been very warm. The maximum on two days was 100 and on three other days was above 95. The minimum for the week was recorded on the 28th which was 53. There was no precipitation.

A small grader known as the Western Midget, manufactured by the Austin-Western Manufacturing Co., of Chicago, Ill., has just been purchased by the station. It is a two horse grader but is built just as strong in proportion as the heavy graders. We find that it is a very good grader for the roadways on the plats.

Flax that was reseeded the week before last has made very poor start this time. The ground was in excellent condition for seeding at the time, but due to the extremely warm weather many of the plants died about the time they emerged and before the roots were well started. Corn has made a very good start this season. A few of the plats have withered the last few days but the most of them are growing. Among the spring plats of wheats the Durums seem to have an advantage due largely to the slightly stronger early growth that has retarded the growth of thistles. All grains on the rotation plats are headed. Winter wheat is in the milk stage or farther and from present indications our harvest will start by at least July 10.

Hays, report for two weeks ending June 28:

Maximum temperature 97.5; minimum 59; precipitation .03 inches. Dry weather has at last arrived. All small grains except spring wheat are maturing rapidly. Barley will be ready to harvest by July 1 and a large part of the winter wheat. Oats will be ready a day or two later. Spring wheat none of which is less than 42 inches high and some as high as 54 inches, is very well headed but beginning to suffer of drought so will very likely not fill well. Barley and oats are both very heavy growths from 2½ to 4 feet and filling fine. Winter wheat on fallow plats will be poor on account of, first, hail damage, and second, by lodging after having apparently recovered from hail damage. The trouble seems to be that the hail crippled the straw so that it has been unable to stand the winds we have occasionally had, though we have had less wind this year than usual.

The past two weeks have been very busy ones. The program has been field work for all, killing weeds, cultivating row crops, plowing under peas, harvesting brome and alfalfa plats, plowing fallows, replanting borders, thinning kafir and milo and soil sampling.

We are so hard up right now for help as any time during the war. We are about to begin putting 11 hours per day in the field.

Hettinger, report for three weeks ending June 28:

We got the first cutting of alfalfa hay into the barn in nice shape. Cultivated all corn plats on D. L. A. and flax rotations. The corn on the plats is a poor stand, the cut worms taking a portion of the second planting. I left Hettinger for Fargo, N. D. on the 10th to attend a conference of station men. This meeting was very successful. A great deal of good can come from such meetings and discussions as the men from different sections offer suggestions that can be of benefit to the station at large. The station men attended the sale of pure bred Holsteins at the Schroeder farm, Morhead, Minn. I visited the Mandan and Dickinson stations while on this trip. I also purchased a herd of pure bred Holsteins at New Salem, N. D. for the Hettinger station.

The weather for the last three weeks has been very dry, accompanied by hot winds which has burned the crops on the station badly. The oats on the D. L. A. plats are completely burned out, and unless we are relieved very soon by a good rain, the grain crop in this section will be a failure. The cultivated crops are doing fairly well although they curl up badly during the day.

Maximum temperature 96.5; minimum 61.1; precipitation .06".

Huntley:

Extremely hot weather and low humidity has persisted throughout the week. A maximum temperature of 107 degrees has been recorded in the past seven days and maximums of over 100 degrees have been frequent. Though we have had two light showers the precipitation was of no benefit to crops.

Huntley, cont'd:

Small grains on fallow are still showing some signs of making a crop but all other methods are about done for. Corn is standing up remarkable well and where there is available moisture the growth has been rapid.

Hogs on the pea plat of the pasture rotation 652 were weighed up and the experiment closed. The crop of peas was very light so was soon disposed of. The acre plat of barley into which these pigs should have been turned for finishing is practically dead and so will not be grazed. The pugs on the dry land alfalfa pastures were also weighed up and the experiment closed as the forage had become too dry to be palatable and no gains were being made.

Maximum temperature 107; minimum 51; precipitation 0.

Lawton:

Although the maximum temperatures ranged from 88 to 92 during the past week there was but little wind movement and the heat was oppressive. Precipitation to the amount of 0.61" fell on the 21st. and a trace was recorded on four other days during the week. The second cutting of alfalfa in Field A was made on the 27th. and the yields averaged 2750 pounds of hay per acre.

Corn is in full tassel except where badly damaged earlier in the season by paris green. Those plats, however, are coming out in nice shape. Corn on M,C.H. ranges from 8 to 9½ feet in height. All sorghum crops are making very rapid growth and cotton has responded quickly to the hot weather.

We are still pretty badly behind with the work as there is some thinning in the sorghum crops to do and considerable cotton to chop yet. It is hoped that this work will all be completed during the next week and all other work be placed in such shape that threshing can proceed in the near future.

Scottsbluff:

Four days of the past week have been characterized by hot winds and high evaporation. Considerable soil blowing took place and all small grain on dry land is practically beyond recovery. Many plats, however, will be too short to harvest even with the mower. Corn is also suffering to some extent. Local showers were reported in places up the valley but not a trace of precipitation fell on the station. During the first six months of this year there has been a deficiency of more than six inches of rainfall. This has been the driest year so far in the history of the station.

Mr. J. O. Belz of the Biophysical Laboratory, Washington, D. C. was a station visitor the fore part of the week.

Maximum temperature for the week 101; minimum 55; precipitation 0.

North Platte:

High temperatures and clear skies with considerable wind have prevailed most of the week. But one shower has occurred. Grain fields are becoming quite dry. Corn is making an excellent growth.

A delegation of 175 farmers from Frontier County visited the station Thursday.

Sheridan:

This has been a week of shattered records for weather and shattered hopes, for the rain we have long expected did not come, but in its stead a mean maximum temperature of 101, which is the the same as the maximum for Sheridan in the last 25 years. The highest temperature we have experienced this week was 105 yesterday.

The following are the weather conditions as shown by data: Maximum 105, mean maximum 101; Minimum 54, mean min 63; evaporation 2.558 with .523 on the 26th; average wind velocity 5.9 miles; precipitation T.

Winter rye is about ready to harvest now, has filled surprisingly well although it stands less than 3 feet high. Winter wheat generally on the station is filling very well, and is just beginning to take on a ripening color. Appearances now indicate that we will have good yields of the two above mentioned crops, the season considered. So much cannot be said about spring planted grains, for many plats, are practically done for without getting to the filling stage of growth. However, there are plats of wheat, oats and barley which are still green and are ready for filling. Corn and sorghum is rolling badly but none of it has yet burned.

A round of soil samples is being taken now, and there is very little moisture left in the soil of most plats sampled. Our winter supply of coal is now all in the basements.

An immense forest fire is burning in the mountains west of Sheridan, having started three or four days ago, and the whole country is hazy from smoke. It appeared last night as though it was beyond control.

Tucumcari:

All crops made satisfactory growth during the week except cotton. With another week of such weather we have just experienced, most of the crops will be out of danger from injury by ordinary soil blowing or heavy rains. On the night of the 26th we had a heavy rain of 2.62" which did slight damage to a number of plats. In other sections of the county this storm assumed the proportions of a cloud-burst and washed out or covered up all crops which had not yet attained considerable height. So far as I have been able to learn no injury was done to the large wheat crop on the plains. It appears not that there will be a considerable shortage of labor and machinery to handle this crop. Vegetables in the dry-land garden are making a good growth as are also melons, pumpkins and squashes planted in the orchard. All plats were lined out during the week and all roadways graded and dragged. Some thinning of crops and also considerable replanting and cultivating was done.

Tucumcari, cont'd:

Maximum temperature 90; minimum 60; wind velocity 3.3 miles; evaporation 2.209"; precipitation 2.75".

Woodward:

Our wheat has been harvested and all the Cereal Office varieties cultivated for the second time during the past week. Thinning has also progressed nicely so that we expect to finish this work after about two days this coming week. Work on the alfalfa hay crop was stopped in order to harvest the wheat so that haying will doubtless hold our attention a part of this coming week.

The forage crops on the rotations are now standing about ten inches high and the plants, on the whole, are uniform and vigorous. All the last plantings of cowpeas, sudan grass, and cotton on the rotations are up for a good stand.

It is reported that the farmers are having much difficulty in securing hands for their wheat harvesting. Many crews are reported as running short handed.

Grasshoppers are still very numerous and are doing considerable damage. Where a row crop is emerging near a wheat plat or an alfalfa plat, the first two or three rows adjacent are stripped. We are scattering poison bran mash every day in an effort to control them.

Maximum for the week 90 on the 27th; minimum 65 on the 22d; precipitation .85 inches.

Bellefourche:

Abnormally hot, dry weather prevailed during the whole week. Maximum temperature ranged from 93 to 107 degrees. Five days of the week registered 98 or above. Rainless thunder storms occurred every day except one.

In spite of this extremely hot weather grain plats are not in materially worse condition than they were a week ago. Oats, wheat and barley on summer fallow have headed and have not commenced to fire as yet. Small grains after all other methods of cultivation are in poor condition.

There will be a boys camp at the farm this year the week preceding the farm picnic. To date over forty applications have been received.

Maximum temperature 107; minimum 52; precipitation .03".